BOOK REVIEW

PLANT CELLS by F. A. L. Clowes and B. E. Juniper. Botanical Monographs, Volume 8, xvii + 546 pages with 163 figures. Oxford and Edinburgh: Blackwell Scientific Publications, 1968. Price £6.

The past ten years have been momentous ones for the student of cell structure. During this period, due largely to improvements in methods of tissue preparation, a consolidated and reproducible picture of the sub-microscopic structure of the cell has developed. *Plant Cells* is a timely and concise summary of the current state of knowledge in particular aspects of this field. The authors admit that the selection and treatment of topics was motivated by personal interests, which has inevitably led to some imbalance, but nevertheless they have succeeded in producing a very readable condensation of the vast literature which now helps to span the gap between microscopic and molecular morphology. Over seven hundred literature references are cited, most of which were published within the last ten years and a hundred and forty-three since 1965, which provide a very adequate guide to the reader in need of more detailed information.

The first two chapters give a brief introduction to techniques and to certain problems of cell size and shape. There follows an account of the ultra-structure of cytoplasm and a survey of cytoplasmic organelles. Wall structure is treated in some detail in Chapter 4, although much of what appears here has been adequately covered by other authors. The chapter on the nucleus does to some extent reflect the inadequacy of present knowledge but it is a pity that the authors of this book have elected not to discuss chromosome morphology, a subject which remains in need of a modern re-appraisal. Chapter 8, on the cell cycle, is an interesting account of this often forgotten aspect of the life of the cell and is obviously based on Dr. Clowes' personal investigations. After a review of some aspects of cell differentiation there follows a most valuable chapter which deals with the structure and development of selected specialised cells and the range of diversity of the organelles within different cell types, a section which might profitably have been expanded further. In the final chapter of the book there is a very useful summary of intercellular information transfer systems, including the inheritance of plastids and mitochondria.

The twenty page glossary is of doubtful value. Is it really anticipated that the class of readers who will use this book will be unfamiliar with the meaning of *auxin*, *chloroplast coleoptile*, *mitosis*, *petiole*, *spore* or *xylem?* The descriptions provided are in any case so superficial that they will hardly enlighten. The index is also inflated by trivialities. For example *oxygen* is given seven page references of unspecified association. The sentence (p. 214) "*They* (tannins) *account for the bitter taste of some fruits, tea and beer*" merits separate entries for *tea* and *beer* although surprisingly, there is no corresponding reference under *fruit*!

As we have come to expect from Blackwell's Scientific Publications, the layout and production of this book is of a high quality. The half tone and line illustrations are excellent and the type is clear and attractive. However, at £6 it seems probable that this book will be purchased mainly by libraries. One is tempted to ask whether, in a field developing as rapidly as sub-microscopic morphology and in which a general work of this nature may have a life expectancy of five years, such a lavish production is justified.

Despite these criticisms this is a most useful and stimulating book. It can be recommended unreservedly to third years and honours botany students as well as to more advanced workers who require an introduction to current ideas in plant cell research.

A. R. A. NOEL